BY ORDER OF THE COMMANDER
AIR FORCE SPACE COMMAND

AIR FORCE SPACE COMMAND
INSTRUCTION 38-201

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Manpower and Organization

MISSILE SITE TRAVEL COMPUTATION

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This instruction implements AFPD38-2, *Manpower*. It provides guidance, tools and information for determining manpower requirements required for off-base travel in support of the mission at the following locations: 90th Space Wing, F.E. Warren AFB WY; 91st Space Wing, Minot AFB ND; 321st Missile Group, Grand Forks AFB ND; and the 341st Space Wing, Malmstrom AFB MT. Bases undergoing OMB Circular A-76 cost comparison studies or functions which have completed a cost comparison and remained in-house are exempted from its use. It does not apply to Air National Guard (ANG) nor Air Force Reserve Command (AFRC) units.

SUMMARY OF REVISIONS

The revision of this publication is to meet the format standards required by Air Force. No content material has changed. Some required format changes have been made to allow for the conversion process.

1. General:

1.1. This instruction provides a standardized methodology for use in quantifying man-hours associated with travel between the support base and launch facilities (LF) and missile alert facilities (MAF).

1.2. This instruction may be used to develop variances or as a model for determining travel man-hours for inclusion in an Air Force Manpower Standard.

1.3. Vehicles not described within the Vehicle Class and Constraint Description (**Attachment 1**) are not covered by this instruction.

1.4. Normally encountered road conditions (**Attachment 4**) are accounted for in this instruction.

2. Responsibilities. HQ AFSPC/XPM initiates and coordinates periodic reviews to ensure the guidance remains current.

3. Procedures:

3.1. Equation: Y = b(X). In this equation: "Y" stands for the computed monthly man-hours, "b" equals the vehicle class and constraint factor, and "X" equals the man-miles traveled.

3.2. Determine the vehicle class and constraints using **Attachment 1**. When the class and constraint are determined, go to the base specific "b" value table (**Attachment 2**) and locate the "b" value. Replace the "b" in the equation with this factor.

3.3. Determine the man-miles traveled by using the predetermined distances or by applying the alternate data collection methods explained in **Attachment 3**. Multiply the mileage by the average crew size, the resulting number will be used as "X" in the equation Multiply the two numbers (b * X) to determine "Y". The resulting number represents monthly man-hours per trip.

3.4. Multiply the man-hours by the average monthly number of trips to derive the total monthly man-hours required for travel.

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Attachment 1

VEHICLE CLASS AND CONSTRAINT DESCRIPTION

A1.1. Vehicle Class:

A1.1.1. Class One. Carry-all, 2 door (dr) Pick-up (P/U), 4dr P/U (6 passenger), 4dr P/U (6 passenger w/camper), Bus, Sedan, Station Wagon, and 4-wheel drive general purpose vehicle.

A1.1.2. Class Two. Maintenance Van, Proto - 1-Ton (telephone maintenance truck), 4dr P/U (6 passenger) w/Maintenance Pack, V-41 1 Ton P/U, v-17 Line Truck, and Armored Response Vehicle, and Missile Guidance Control Set (MGSCS) Support Truck.

A1.1.3. Class Three. 5-Ton Tractor Trailer, 10-Ton Tractor Trailer, 5-Ton and 2 1/2-Ton Dump, and Wrecker (not in service).

A1.1.4. Class Four. 2 1/2 Ton P/U (Texas P/U), 2 1/2 Ton Dump w/Trailer, 5-Ton Dump w/Trailer, 1 1/2 Ton Stake/Platform, 5-Ton Water Tanker, and 5-Ton Oil Truck/Tanker.

A1.1.5. Class Five. Transporter-Erector Tractor/Trailer and Ballistic Missile Tractor/Trailer, Type II Tractor/Transporter, Peacekeeper Tractor/Emplacer, Air Elevator Support Tractor/Trailer, Payload Transporter III Tractor/Trailer, and Periodic Maintenance Team (PMT) Tractor/Trailer.

A1.1.6. Class Six. Wrecker (in service), Crane (not in service), and Snow Plow/Blower (not in service).

A1.1.7. Class Seven. Front-End Loader, Farm Tractor, and Grader.

A1.2. Vehicle Constraint. When selecting vehicle constraints B - H, use the slowest vehicle which normally travels with the study vehicles as your constraint.

A1.2.1. Constraint A. Traveling alone on a routine or general purpose dispatch.

A1.2.2. Constraint B. Accompanied by a Class one vehicle.

A1.2.3. Constraint C. Accompanied by a Class two vehicle.

A1.2.4. Constraint D. Accompanied by a Class three vehicle.

A1.2.5. Constraint E. Accompanied by a Class four vehicle.

A1.2.6. Constraint F. Accompanied by a Class five vehicle.

A1.2.7. Constraint G. Accompanied by a Class six vehicle.

A1.2.8. Constraint H. Accompanied by a Class seven vehicle.

Attachment 2

BASE SPECIFIC "B" CHARTS

Table A2.1. F.E. Warren AFB "b" Value Table.

	A	B	C	D	E	F	G	H	Constraint
1	.0210	.0210	.0219	.0227	.0236	.0266	.0297	.0332	
2	.0219	.0219	.0219	.0227	.0236	.0266	.0297	.0332	
3	.0227	.0227	.0227	.0227	.0236	.0266	.0297	.0332	
4	.0236	.0236	.0236	.0236	.0236	.0266	.0297	.0332	
5	.0266	.0266	.0266	.0266	.0266	.0266	.0297	.0332	
6	.0297	.0297.	.0297	.0297	.0297	.0297	.0297	.0332	
7	.0332	.0332	.0332	.0332.	.0332	.0332	.0332	.0332	
Class									

Table A2.2. Minot AFB "b" Value Table.

	A	B	C	D	E	F	G	H	Constraint
1	.0231	.0231	.0240	.0250	.0259	.0293	.0326	.0365	
2	.0240	.0240	.0240	.0250	.0259	.0293	.0326	.0365	
3	.0250	.0250	.0250	.0250	.0259	.0293	.0326	.0365	
4	.0259	.0259	.0259	.0259	.0259	.0293	.0326	.0365	
5	.0290	.0293	.0293	.0293	.0293	.0293	.0326	.0365	
6	.0326	.0326	.0326	.0326	.0326	.0326	.0326	.0365	
7	.0365	.0365	.0365	.0365	.0365	.0365	.0365	.0365	
Class									

Table A2.3. Grand Forks AFB "b" Value Table.

	A	B	C	D	E	F	G	H	Constraint
1	.0234	.0234	.0243	.0253	.0262	.0297	.0330	.0369	
2	.0243	.0243	.0243	.0253	.0262	.0297	.0330	.0369	
3	.0253	.0253	.0253	.0253	.0262	.0297	.0330	.0369	
4	.0262	.0262	.0262	.0262	.0262	.0297	.0330	.0369	
5	.0297	.0297	.0297	.0297	.0297	.0297	.0330	.0369	
6	.0330	.0330	.0330	.0330	.0330	.0330	.0330	.0369	
7	.0369	.0369	.0369	.0369	.0369	.0369	.0369	.0369	
Class									

Table A2.4. Malmstrom AFB "b" Value Table.

	A	B	C	D	E	F	G	H	Constraint
1	.0238	.0238	.0248	.0258	.0267	.0302	.0336	.0376	
2	.0248	.0248	.0248	.0258	.0267	.0302	.0336	.0376	
3	.0258	.0258	.0258	.0258	.0267	.0302	.0336	.0376	
4	.0267	.0267	.0267	.0267	.0267	.0302	.0336	.0376	
5	.0302	.0302	.0302	.0302	.0302	.0302	.0336	.0376	
6	.0336	.0336	.0336	.0336	.0336	.0336	.0336	.0376	
7	.0376	.0376	.0376	.0376	.0376	.0376	.0376	.0376	
Class									

Attachment 3

PREDETERMINED MILEAGE AND ALTERNATE DATA COLLECTION METHODS

A3.1. Predetermined Mileage. The table below contains predetermined mileage for average round-trip travel from the support base to missile alert facilities (MAF) and launch facilities (LF). This mileage takes into account the mileage from support base to all MAF or LF which is then averaged.

Table A3.1. Predetermined Mileage.

Base	Avg. Round-Trip Distance to MAF	Avg. Round Trip Distance to LF
F.E. Warren AFB	170.90	172.56
Minot AFB	112.14	114.52
Grand Forks AFB	104.10	140.01
Malmstrom AFB	164.14	158.88

A3.2. Alternate Data Collection Methods. Man-miles may be collected using various techniques. The time frame for data collection must take into account seasonal variations. The following is a recommended method for collecting the data. All other methods must be coordinated and approved by HQ AFSPC/XPMX. Work Center Log. Establish a log within the work center for each vehicle used by the work center. The log must document (as a minimum) the starting odometer reading, ending odometer reading, number of personnel, class of vehicle, and remarks as to any constraints on the vehicle. Reference Attachment 1 for a list of constraints.

Attachment 4

STATEMENT OF CONDITIONS

A4.1. Road Surface Condition. A composite range of road surface conditions was included in sample data, to include very smooth paved to very rough graveled.

A4.2. Road Surface Type. All road surface types, which are present in a typical Minuteman Missile Complex were included in the sample data.

A4.3. Traffic. A composite range of traffic conditions was included in the sample data, to include very light to very congested driving conditions.

A4.4. City Driving. A composite range of city sizes was included in the sample data, to include cities from 1,000 to 60,000 population.

A4.5. Weather. Scenarios ranging from the worst to the best weather conditions were included in the sample data.

A4.6. Accident Involving Vehicle Under Study. This condition did not occur frequently enough to impact the rate of speed which the vehicles are maintaining.

A4.7. Accident Involving Other Vehicle. Government personnel frequently stop and render assistance to other motorists. The impact of assisting other motorists involved in vehicle accidents or incidents was included in the sample data.

A4.8. Incident. Incidents such as bridge construction and washouts were included in the sample data.

A4.9. Driver Change/Personal Necessity. The impact of driver changeover and periodic relief stops were included in the sample data. Ten minutes per person was allowed for each dispatch between 60 and 110 miles in length. Dispatches less than 60 miles can be accomplished without a rest stop or driver change, while personnel on dispatches over 110 miles can use the services of a missile alert facility.

A4.10. Vehicle Malfunction/Breakdown. Delays due to vehicle malfunctions or breakdowns were included in the sample data.

A4.11. Vehicle Class. A composite range of vehicle types were included in the sample data. the impact of each vehicle type on the driving speed was quantified as a percentage of normal and expressed in the matrix form at Atch 2.